

MAKING STEM CELLS, NOT PEOPLE

Scientists believe there is great potential for creating new human embryonic stem cell lines using a method known as somatic cell nuclear transfer (SCNT—often called “therapeutic cloning.”) But there is still widespread confusion over how the technique is used. When scientists use SCNT to create stem cells, no sperm is used and the resulting cell has no chance of developing into a human being because it is never placed in a uterus. This is a fundamentally different procedure from reproductive cloning, as was used by scientists in 1996 to create Dolly the sheep.

USING SCNT FOR CREATING STEM CELLS IS FUNDAMENTALLY DIFFERENT FROM USING IT FOR REPRODUCTIVE CLONING.

SCNT involves removing the nucleus of a donor’s unfertilized egg and replacing it with the nucleus of an adult cell, such as a skin, heart or nerve cell. No sperm is used in the procedure. The goal is to create embryonic stem cells, and the cell, with its new nucleus, is placed in a lab dish and stimulated to begin dividing. After five or six days, it develops into a hollow cellular ball from which researchers can extract embryonic stem cells. The new cell is never placed in a uterus and thus will not develop into a human being. The first human embryonic stem cells created through SCNT were developed by scientists in South Korea in February 2004. With adequate support, other scientists using and refining this method will be able to produce more human stem cell lines.

SCIENTISTS BELIEVE SCNT OFFERS GREAT THERAPEUTIC AND RESEARCH POTENTIAL.

Embryonic stem cells derived through SCNT are unique in that they are genetically matched to the adult cell donor, meaning they might be transplanted into the donor without need for suppressing the immune system. For example, stem cell lines derived through SCNT from a person with a

spinal cord injury could potentially be directed to develop into nerve cells, and these nerve cells could be used to treat the same patient. In addition to its therapeutic potential, SCNT offers a powerful way to gain insight into the development of diseases. A stem cell taken from a person with a complex genetic disease could be used to study how the disease develops from its earliest stages.

SCNT FOR STEM CELL PRODUCTION IS ENDORSED BY THE NATIONAL ACADEMY OF SCIENCES¹

In a 2001 report assessing the potential of stem cells and how it can best be realized, the National Academy of Sciences (NAS) said that SCNT is essential to finding ways to overcome tissue rejection by producing cells that are a genetic match to a patient. In addition, 40 Nobel Laureates have released a letter expressing concern that a ban on all human cloning research would “have a chilling effect on all scientific research in the United States.”²

A CLEAR MAJORITY OF AMERICANS SUPPORT THE USE OF SCNT TO PRODUCE STEM CELLS

A poll commissioned for the Coalition for the Advancement of Medical Research (CAMR) showed that 67 percent of Americans support the use of SCNT for stem cells and want the government to allow it to proceed. The poll surveyed 1,012 adult Americans on March 6, 2003, and was conducted by Opinion Research Corporation International.³

USING SCNT FOR HUMAN REPRODUCTIVE CLONING IS UNETHICAL. THERE IS ALMOST UNANIMOUS OPPOSITION TO HUMAN REPRODUCTIVE CLONING.

The most effective method for preventing human reproductive cloning is to pass federal legislation banning the practice and imposing severe penalties on those who violate the law. Such legislation will be re-introduced in the new Congressional session that could eliminate the threat quickly, while preserving scientific research.

¹ National Academy of Sciences, Stem Cells and the Future of Regenerative Medicine, 2001, “Recommendations,” p. 5

² <http://www.camradvocacy.org/fastaction/news.asp?id=210>

³ http://www.camradvocacy.org/fastaction/arc_news.asp?id=544